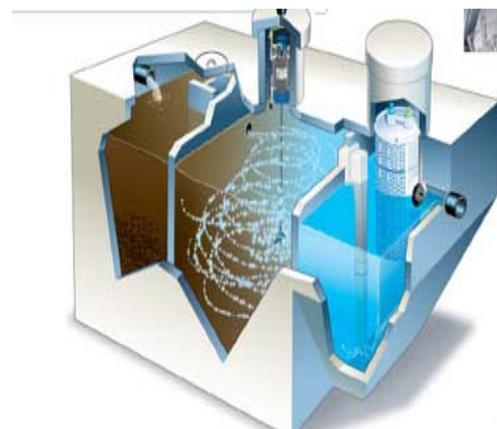
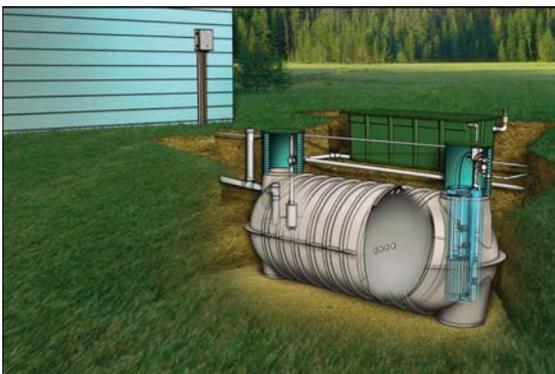




## 2009 ANNUAL REPORT

Of the

## Sewage Treatment Systems Technical Advisory Committee



## Executive Summary

Section 3718.03 of the Ohio Revised Code (ORC) creates the Sewage Treatment Systems Technical Advisory Committee (TAC), outlines its membership, identifies individuals granted the authority to appoint committee members, and provides guidelines concerning the committee's responsibilities and procedures. Paragraph (G) of ORC 3718.03 requires the chairperson of the committee to prepare an annual report concerning the activities of the committee and submit the report to the general assembly. The purpose of this report is to fulfill that requirement.

TAC scheduled monthly meetings to review products in 2009. During 2009, TAC reviewed twenty-six sewage treatment systems or components from ten manufacturers. Of the twenty-six reviews, fifteen were requests to modify previous approvals and eleven were requests for approval of new sewage treatment systems or components. Two of the reviews were for newly developed ultraviolet disinfection units lacking sufficient performance information to support the manufacturers' treatment claims. In order to assess the effectiveness of the two products, the committee recommended approval pilot projects allowing limited installation of systems utilizing the technology and strict guidelines for collection of performance information sufficient for committee review of the products.

The systems and components recommended for approval in 2009 by TAC have provided for the use of soil absorption system area sizing reductions, soil depth credits to reduce the thickness of soil required below a soil absorption system, and approval for constantly meeting the effluent quality standards outlined in the Ohio Environmental Protection Agency's (OEPA) National Pollutant Discharge Elimination System (NPDES) General Permits for household sewage treatment systems. A soil absorption area sizing reduction allows a homeowner who is installing a sewage treatment system or component approved for meeting specified standards to install a soil absorption system utilizing a smaller area. This is beneficial to homeowners who have limited area in which to install their sewage treatment system. A soil depth credit allows a homeowner who is installing a system or component approved for meeting specified standards to install a system using less thickness of soil beneath the soil absorption component than is normally required by state or local rule. This is beneficial to homeowners who have lots with shallow soil and will allow many homeowners to install subsurface soil absorption components as opposed to mounded or other more complex systems. The committee also recommended approval of eight sewage treatment system trains designed to meet the effluent quality standards outlined in the Ohio EPA National Pollutant Discharge Elimination System (NPDES) General Permits for household sewage treatment systems. These approvals provide a wider market of system choices for homeowners who are unable to install soil absorption components on their existing lots.

Through the creation of two workgroups, TAC worked with the department of health to develop two new special device approvals and modify a third previously approved special device approval.

Together, the committee and the department of health revised the *ORC 3718 Review Application*, *ORC 3718 Review Checklist*, and *Standards and Guidelines for ORC 3718 Review* to reflect changes in the committees review process and provide increased guidance and protocols to manufacturers seeking approval of their products in the state. The committee researched and reviewed effluent sampling protocols and recommended the creation of a guidance document outlining the appropriate procedures for effluent sampling in compliance with the monitoring requirements of the Ohio EPA NPDES General Permits for household sewage treatment systems.

TAC reviewed a proposed project to develop a risk-based approach for examining vertical separation distances in on-site wastewater disposal systems presented by Anthony Janicek with Cleveland State University. The committee recommended that the department of health fund the proposal.

TAC will continue to work with system manufacturers to review and recommend approval or disapproval of new technologies to the Director of Health, and will actively pursue the research, development, and timely approval of innovative and cost-effective alternative technologies as required under section 3718.03 (F)(4) of the Ohio Revised Code.

## ***Sewage Treatment Systems Technical Advisory Committee Membership and Meetings***

The Sewage Treatment Systems Technical Advisory Committee (TAC) membership and appointment authority is outlined in Section 3718.03 of the Ohio Revised Code. The members of TAC during 2009 were:

<b><i>2009 TAC Member</i></b>	<b><i>Company</i></b>	<b><i>Representing</i></b>
Dick Bachelder	PSA, Inc.	Manufacturer
Ralph Benson, RS	Clermont County Health District	OEHA Sanitarian
Neil Martin*	Ohio Department of Natural Resources, Div. of Soil and Water Conservation	Soil Scientist, ODNR
Ernie Stickler		Public Member
Scott Hetrick	Norweco, Inc.	Manufacturer
Raymond Saporito, MPH, RS	Ashtabula County Health Department	AOHC Health Commissioner
Mark Fehring	Fehring Services	System Installer
Mark Stump, PE	Ohio EPA	Engineer
Charles Patterson, RS	Clark County Health Dept.	AOHC Health Commissioner
Mark Tumeo, PhD, JD, PE	Cleveland State University	Academia
Rebecca Fugitt, MS, RS	Ohio Department of Health	Director of Health Representative

\* Neil Martin served as the ODNR soil scientist at the committee's April 14, July 14, August 11 meetings. The position was vacant for the remaining meetings.

The TAC scheduled monthly meetings to review products in 2009. When no products were scheduled for review the meeting was cancelled. TAC held eight regular monthly meetings in 2009. Although no products were scheduled for review in June, a ninth monthly meeting was held via conference call on June 9 to continue discussion on changes to the *ORC 3718 Review Application*, *ORC 3718 Review Checklist*, and *Standards and Guidelines for ORC 3718 Review*, and the *Leaching Trench Products Utilizing a Non-gravel, Fines-Free Distribution System Special Device Approval*. The department of health also provided the committee with legislative updates during the conference call.

A complete record of the meeting summaries for each monthly meeting and the recommended approvals that were made may be found in Appendix 1 and is posted on the ODH website at:

<http://www.odh.ohio.gov/odhPrograms/eh/sewage/tac1.aspx>.

## ***Sewage Treatment Systems and Components Reviewed by TAC***

TAC reviewed twenty-six sewage treatment systems or components from ten manufacturers. Of the twenty-six reviews, fifteen were requests to modify previous approvals, and eleven were requests for approval of new sewage treatment systems or components. Two of the reviews were for newly developed ultraviolet light disinfection units lacking sufficient performance information to support the manufacturers' treatment claims. In order to assess the effectiveness of the two products, the committee recommended approval of pilot projects allowing limited installation of systems utilizing the technology and strict guidelines for collection of performance information sufficient for committee review of the products.

<b>Manufacturer</b>	<b>Product</b>	<b>Application Date</b>	<b>TAC Meeting</b>	<b>Approval Date (ODH Director)</b>	<b>Notes</b>
Ecological Tanks, Inc.	AS600+4NR and Disinfecter UV Unit	11-25-08	1-13-09	2-20-09	
Ecological Tanks, Inc.	AA500-35-NR and Disinfecter Unit	11-25-08	1-13-09	2-20-09	
Quanics, Inc.	ATS-SCAT-16-AC-2500	11-25-08	1-13-09	2-20-09	
HydroAction, Inc.	AP Series	11-25-08	1-13-09	2-20-09	
HydroAction, Inc.	SNG-UV Series	11-25-08	1-13-09	2-20-09	
Consolidated Treatment Systems, Inc.	Enviro-Guard ENV and ENV-M	2-10-09	2-10-09	3-2-09	1
Ecological Tanks, Inc.	Aqua-Safe AS-C	2-24-09	3-10-09	3-19-09	1
Ecological Tanks, Inc.	Aqua-Safe AS-C and the Disinfecter UV Unit	2-24-09	3-10-09	3-19-09	1
Ecological Tanks, Inc.	Aqua-Safe AS-C, the Disinfecter UV Unit, Reaeration, and Telemetry or Pump Lockout	2-24-09	3-10-09	3-19-09	1
Bord na Mona	Puraflo Peat Biofilter	2-25-09	3-10-09 4-14-09	4-28-09	1
Norweco, Inc.	Singulair TNT, chlorination and de-chlorination with ChemCheck	3-10-09	3-10-09 4-14-09	4-29-09	1
Norweco, Inc.	Singulair TNT, chlorination and de-chlorination, Reaeration (in separate pump basin), and Service Pro Telemetry or Pump lock with ChemCheck	3-10-09	3-10-09 4-14-09	4-29-09	1
Norweco, Inc.	Singulair TNT, chlorination and de-chlorination, Reaeration (within the BioKinetic filter), and Service Pro Telemetry or Pump lock with ChemCheck	7-14-09	7-14-09	7-30-09	1

Winelco, Inc.	Uvirex 36 UV Unit	7-1-09	7-14-09	7-30-09	2
Norweco, Inc.	Norweco AT 1500 UV Unit	8-11-09	8-11-09	8-27-09	2
SludgeHammer, Ltd	SludgeHammer Aerobic Bacterial Generator Model S 400	7-24-09	8-11-09	8-27-09	
Glendon Biofilter Technologies, Inc.	Glendon Biofilter Models M31 and M32	7-24-09	8-11-09 11-10-09		3
Jet, Inc.	1500 Series BAT Media Plants, Salcor 3G UV Unit, internal re-aeration pump/no basin + Telemetry or Pump lock	11-10-09	11-10-09	11-24-09	1
Consolidated Treatment Systems, Inc.	Nayadic M Series	12-8-09	12-8-09	1-13-10	3,4
Consolidated Treatment Systems, Inc.	Nayadic M Series and Salcor 3G UV Unit	12-8-09	12-8-09	1-13-10	3,4
Consolidated Treatment Systems, Inc.	Enviro-Guard ENV or ENV-M, Salcor 3G UV Unit, Re-Aeration, and pump lockout or telemetry	12-8-09	12-8-09	1-21-10	1
Norweco, Inc.	Singulair 960 and Norweco AT 1500 UV Unit	12-1-09	12-8-09	1-21-10	1
Norweco, Inc.	Singulair TNT and Norweco AT 1500 UV Unit	12-1-09	12-8-09	1-21-10	1
Norweco, Inc.	Singulair 960, Norweco AT 1500 UV Unit, Re-aeration (in separate pump basin or within BioKinetic System chamber), and Service Pro Telemetry or Pump lock	12-1-09	12-8-09	1-21-10	1
Norweco, Inc.	Singulair TNT, Norweco AT 1500 UV Unit, Re-aeration (in separate pump basin or within BioKinetic System chamber), and Service Pro Telemetry or Pump lock	12-1-09	12-8-09	1-21-10	1
Norweco, Inc.	Singulair 960, Norweco AT 1500 UV Unit (direct bury), Re-aeration (within BioKinetic filter), and Service Pro Telemetry or Pump lock	12-1-09	12-8-09	1-21-10	1

- (1) Modification to a previous approval
- (2) Pilot Project
- (3) Manufacturer requested an extension to the statutory 90 day review period
- (4) TAC originally heard CTS, Inc.'s request for approval of the Nayadic in 2008 and requested additional information. CTS, Inc. forwarded the information in December of 2009.

## ***Other TAC Activities and Actions***

### **Special Device Approvals**

Through the creation of two subcommittee workgroups, TAC worked with the department of health to develop two new special device approvals and modify a third previously approved special device approval. The process and authority for approval of sewage treatment system components, and technologies that differ from rule as special devices is found under OAC Rule 3701-29-20 (C). These special device approvals are listed on the ODH website at:

<http://www.odh.ohio.gov/odhPrograms/eh/sewage/sewmore.aspx> and includes:

- The *Leaching Trench Products Utilizing a Non-gravel, Fines-Free Distribution System Special Device Approval* was recommended for approval by the committee on April 14, 2009 and approved by the Director of Health on July 27, 2009. The special device approval is the result of the hard work of a committee workgroup consisting of several TAC members, Rebecca Fugitt (ODH), Ralph Benson (OEHA), Neil Martin and Tim Gerber (ODNR), Dick Bachelder (Industry/ADS), and Dr. Mark Tumeo (Academic), external industry stakeholders, Carl Thompson and Zak Sherman with Infiltrator, Inc. and Ben Berteau and Brock Wanless with Ring, Inc., soil scientists Steve Miller and Brian Slater, and department of health staff, Nathan Johnson, Amy Wood, and Dusten Gurney. The workgroup was established at the February 12, 2008 TAC meeting and met by conference call regularly during development of the special device approval. This special device approval provides standards and specifications for the use of chambers and expanded polystyrene bundles in soil absorption systems. The approval provides up to a 25% reduction in the total square footage of the soil absorption system with the use of these products as opposed to conventional gravel trenches.
- The *Low Pressure Sand Bioreactor Special Device Approval* was recommended for approval by the committee on July 14, 2009 and approved by the Director of Health on January 11, 2010. The special device approval is the result of the hard work of a committee workgroup consisting of TAC members Raymond Saporito (AOHC) and Mark Fehring (Installer/Service Provider, external industry stakeholders Stephen Tricamo with the Potters Company and Charles Ray and Colin Bishop with Bord an Mona, Chris Griffith with the Hamilton County General Health District, and Nathan Johnson with the department of health. The workgroup was established at the August 12, 2008 TAC meeting and met by conference call regularly during development of the special device approval. This special device approval provides standards and specifications for single pass, siphon dosed gravity sand filters (non-electrical). The low pressure sand bioreactor special device approval also provides a one-foot soil depth credit for use in areas where insufficient thickness of useable soil for sewage treatment is available.

### **TAC Application, Checklist, and Standards and Guidelines for ORC 3718 Review**

Section 3718.03 (F) of the Revised Code requires TAC in cooperation with the department of health to develop standards and guidelines and an application form for ORC 3718 Review.

The committee revised the *ORC 3718 Review Application*, *ORC 3718 Review Checklist*, and *Standards and Guidelines for ORC 3718 Review* to reflect changes in the committee's review process and provide increased guidance and protocols to manufacturers seeking approval of their products in the state. These documents can be found on the ODH website at:

<http://www.odh.ohio.gov/odhPrograms/eh/sewage/tac1.aspx> .

### **Sampling Protocol for Discharging Sewage Treatment Systems**

The committee researched, reviewed, and provided significant guidance concerning the development of an effluent sampling protocol outlining the appropriate procedures for effluent sampling in compliance with the monitoring requirements of the Ohio EPA National Pollutant Discharge Elimination System (NPDES) General Permits for household sewage treatment systems. The sampling protocol can be found on the ODH website at:

<http://www.odh.ohio.gov/ASSETS/BE461B951C8441539109E471FFB4528F/NPDESSp.pdf>

### **Proposed Project**

TAC reviewed a project proposal from Anthony Janicek with Cleveland State University. Mr. Janicek plans to develop a multi-purpose model to determine appropriate vertical separation distances in on-site wastewater disposal systems utilizing a risk-based approach. Mr. Janicek claims that the model, once developed, could be used in several ways:

- by regulators to aid in educating industry professionals and the public on the actual risks
- associated with contaminants, bacterial or otherwise, reaching the groundwater table;
- as a tool for land use planning by municipalities or county officials when developing or updating land use codes as well as a tool that can aid in the decision process of granting variances; and
- by designers in determining the most appropriate treatment system for a specific site.

Mr. Janicek's submittal included a budget proposal. Mr. Janicek requested TAC recommendation that the department of health fund the proposal with a grant from the Sewage Treatment System Innovation Fund. The committee discussed the advantages of having access to such a model and recommended that the department of health fund the proposal with a grant from the Sewage Treatment System Innovation Fund.

## ***Challenges and Findings***

The primary function of TAC is to provide recommendations to the Director of Health on the approval or disapproval of systems and components of sewage treatment systems that differ in design or function from those authorized in the administrative code. The statewide interim rules recognize one national standard for the performance of pretreatment components which is the National Sanitation Foundation (NSF) Standard 40, which tests specifically for biochemical oxygen demand (BOD) and total suspended solids (TSS). Other programs such as the General NPDES permit required for replacement discharging sewage treatment systems have effluent standards for other parameters such as ammonia, fecal coliform and *E. coli*, and dissolved oxygen. Systems may also demonstrate that they reduce fecal coliform numbers to obtain soil depth credits that allow for a reduction in the thickness of soil needed to treat the rest of the contaminants in the sewage. NSF and other independent third party testing entities offer services for testing these sewage effluent parameters, and often manufacturers use these services to demonstrate the performance of their systems over a wide range of operating conditions such as waste strength, load and temperature (climate). Testing of components can be made over periods of weeks or months, and the length of testing is considered when determining the sustained performance of a treatment component.

Evaluation of third party testing data is generally fairly straightforward; however, components are often tested at different times for different parameters and in different configurations than those proposed in an application for approval. Further, some components do not go through third party testing, but may be proposed for approval based on testing of existing systems at homes in Ohio or other states, testing by academic institutions or individual proprietors. All of these variables lend a degree of complexity to the review process, and subsequently, TAC has gone through an evolutionary process regarding the completeness and value of data in the review of and recommendations for approval/disapproval of products.

### **Evaluation of combined technologies**

During 2009, the majority of the applications provided to TAC were for manufactured pretreatment components that treated the sewage effluent either prior to discharge to a soil absorption unit or surface water. One application was the exception, with a request to consider a specifically designed tank and sand bed configuration used as treatment component and soil absorption. This review presented a challenge in that TAC was accustomed to reviewing pretreatment components based on effluent standards achieved at the end of a mechanical device and soil absorption configurations separately but the committee does not have a formal procedure and criteria for reviewing combined treatment/soil absorption units.

Anticipating future requests for similar combined technologies, TAC discussed how to conduct the reviews and determined that the systems would have to be evaluated with consideration of two factors:

1. the treatment achieved
2. how the system achieved *proper hydraulic loading* to the soils

Due to this application, TAC recognized the alternative review approach and was able to shift its perspective on system/component review and provide guidance to the applicant on information needed for review, but the committee found it difficult to produce guidance that would be applicable to all anticipated combined technologies.

### **Review of Performance Information**

TAC recognized the need to regularly perform a review of the *Standards and Guidelines for ORC Review*, the *ORC 3718 Application* form and checklist to review each documents content data requirements. In reviewing the *Standards and Guidelines for ORC Review* the committee attempted to address concerns expressed by some manufacturers concerning the number of data points needed to demonstrate compliance with the effluent quality standards. In response to the manufacturers the committee included clear and concise guidance and protocols in the revised *Standards and Guidelines for ORC Review*. The resulting document *Use of Confidence Interval in Analyzing Data* is included in the revised standards and guidelines document.

### **Approval of STS and Components for Meeting Nutrient/Nitrogen Standards**

Prior to legislative changes in July of 2007, STS and components were reviewed internally by the department of health as authorized by a since rescinded version of OAC 3701-29. Following these changes TAC adopted standards and criteria for review similar to what was in the rescinded rule. Both the department and TAC had recognized a STS or components ability to decrease nutrient loads to ground or surface water but neither had officially adopted performance standards to which a STS or component could be measured. Two manufacturers requested recommendation for approval for reducing the nutrient load in effluent. TAC had much discussion on how to conduct the reviews and after reviewing applicable national and industry standards determined appropriate standards and included them in the revised *Standards and Guidelines for ORC Review*.

### **Review of components of a sewage treatment system**

During 2009, the majority of the applications provided to TAC were for sewage treatment systems treated the sewage effluent either prior to discharge to a soil absorption unit or surface water. Three requests were for parts of a system instead of a complete treatment system. One request was for approval of a tertiary treatment filter and the other requests were for ultraviolet disinfection units. TAC had much discussion on how to conduct the reviews and determined that the components would have to be evaluated with consideration to the treatment trains they would be incorporated into and the components they would replace. The committee determined that the proprietors of these sewage treatment system components would have to identify the variety of conditions the components would be operating in and supply performance information to support its use in those conditions. Each of the three proprietors approached the request in a different manner.

One proprietor seeking approval of a tertiary treatment filter approached a manufacturer with an approved treatment train and conducted third party testing of a new treatment train including the filter with the anticipation of returning to the committee with the treatment train manufacturer to supply the committee with sufficient performance data.

A second proprietor seeking approval of an ultraviolet disinfection unit installed several systems through a limited approval as a pilot project. The proprietor was then able to collect performance data for the unit under a variety of environmental conditions and return to the committee. The committee recognized the performance information and recommended that the Director of Health administratively review and approve future requests from manufacturers requesting modification to previously approved treatment trains to include the unit.

Finally, the third proprietor sought out third party testing of a complete treatment train including the ultraviolet disinfection unit for which it sought approval. The proprietor returned to the committee and received a recommendation from the committee for statewide approval for the tested treatment train.

An overview of these ancillary, but related discussions were recorded in the meeting summaries.

**SEWAGE TREATMENT SYTSEMS  
TECHNICAL ADVISORY COMMITTEE  
2009 ANNUAL REPORT**

**APPENDIX 1**

## **Sewage Treatment Systems Technical Advisory Committee** **MEETING MINUTES**

Date: Tuesday – January 13, 2009

Time: 10:00 AM to 3:00PM

Location: Ohio Department of Natural Resources, 2045 Morse Road, Columbus

### **TAC Members in Attendance (10 of 10) were present):**

ODH Director of Health Representative & TAC Chair – Rebecca Fugitt

Installer/ Service Provider – Mark Fehring, Fehring Services

Public – Ernest Stickler, Environmental Engineering Service

OEPA DSW Engineer – Mark Stump

Manufacturer Representative - Scott Hetrick, Norweco Inc.

OEHA Registered Sanitarian – Ralph Benson, Clermont County General Health District

AOHC Health Commissioner – Charles Patterson, Clark County Combined Health District

Manufacturer Representative – Dick Bachelder, PSA, Inc.

Academic - Dr. Mark Tumeo PhD, Cleveland State University

AOHC Health Commissioner –Raymond Saporito, Ashtabula County Health Department

### **Not Present:**

ODNR Soil Scientist - Vacant

### **Guests:**

Chris Mandich of Jet Inc., Joe Keiser and Mike Felton of StreamKey, Dick Harned of WDR, Inc., James Conley of AK/HA Manufacturing, Ben Berteau of Ring Industrial Group, Zak Sherman and Carl Thompson of Infiltrator Systems, Berry Meadows of Superior Septic, LLC, Kevin Sherman of Quantics, Inc., Charles Ray of Bord NA Mona, Neil Martin of ODNR, and Ani Fete ODH Government Affairs

Other ODH participants: Nathan Johnson

### **Welcome and Agenda review:**

Introductions were made by all in attendance. Rebecca Fugitt reviewed the meeting agenda and announced that Berry Meadows of Superior Septic, LLC requested to be added to the end of the agenda to discuss the approval process for a tertiary treatment filter. Dick Bachelder requested Ecological Tanks to be added to the agenda. Rebecca Fugitt stated that she had planned to discuss Ecological Tanks during the agenda item *Pending Applications*. Committee members agreed to add Ecological Tanks as the first item of discussion.

### **Meeting Minutes:**

The TAC members reviewed the December 9, 2008 meeting minutes.

A motion was made by Mark Tumeo and seconded by Ernie Stickler for approval of the December 9, 2008 meeting minutes as submitted. TAC members present voted in favor of the motion.

**Ecological Tanks Request for Approval of the Aqua Safe Aeration Treatment Unit Model AS600+4NR and The Disinfector UV Disinfection Unit for fecal coliform standards <1000 and <200 and a Nutrient Reduction and the Aqua Aire Aeration Treatment Unit Model AA500-35-NR with The Disinfector UV Disinfection Unit for fecal coliform standards <1000 and <200 , a Nutrient Reduction, and NPDES discharge to the waters of the state not including Lake Erie.**

The committee revisited the recommendation for approval of Ecological Tanks Aqua Aire and Aqua Safe units. Rebecca Fugitt announced that Mr. Locker had contacted her and stated that he was having difficulty obtaining the additional information (a NSF cover letter permitting the scaling of the product and defining the pretreatment tank sizing for each model) the committee requested as part of their recommendation for approval at their December 9, 2008 meeting. Mr. Locker requested approval for the NSF tested models separate from the scaled models in order to expedite their approval. The committee inquired about the approval or denial of the other models. Dick Bachelder requested that Ecological tanks be placed on the TAC agenda for February so that the committee could take further action provided Ecological tanks does not supply the requested information or withdraw their request. Dick Bachelder made a motion to recommend approval of the Ecological Tanks Aqua Aire Aeration Treatment Unit Model AA500-35-NR with The Disinfecter UV Disinfection Unit for fecal coliform standards <1000 and <200 colonies/ 100mL and the Ecological Tanks Aqua Safe Aeration Treatment Unit Model AS600+4NR with The Disinfecter UV Disinfection Unit for fecal coliform standards <1000 and <200 colonies/ 100mL. Charles Patterson seconded the motion. TAC members present voted in favor of the motion.

**Quanics Request for approval of the Aerocell Self Contained Advanced Treatment System Models ATS-SCAT-3-AC-200, ATS-SCAT-4-AC-400, ATS-SCAT-6-AC-650, ATS-SCAT-8-AC-1000 with a septic tank for fecal coliform standards <10000, <1000 and <200, and a Nutrient Reduction; Models ATS-SCAT-3-AC-200, ATS-SCAT-4-AC-400, ATS-SCAT-6-AC-650, ATS-SCAT-8-AC-1000 with a septic tank and the Salcor 3G UV Disinfection Unit for fecal coliform standards <20; and approval of the ATS-SCAT-16-AC-5000 model for achieving the BOD<sub>5</sub>/ TSS standard of <30mg/L and Nutrient Reduction,**

Kevin Sherman, Quanics, Inc.

Kevin Sherman provided the data from five additional testing programs to support performance claims of the units loaded at 12.5 gpd per ft<sup>3</sup>. Committee members discussed the data supporting the 12.5 gpd per ft<sup>3</sup> loading rate and expressed concern over the quantity of data and results in some of the reports. After committee members explained their concerns, Kevin Sherman announced that he will withdraw his request for approval of the units loaded at the 12.5 gpd per ft<sup>3</sup> loading rate.

The committee discussed the ATS-SCAT-16-AC-5000 model loaded at 2500 gallons a day (ATS-SCAT-16-AC-2500) and several members expressed that they felt the model was not designed for household or small flow onsite sewage treatment systems. Discussion ensued by all members concerning the use of a 2500 gallon a day unit for household sewage treatment systems and small flow onsite sewage treatment systems that utilize flow equalization.

Mark Tumeo made a motion to recommend approval of the ATS-SCAT-16-AC-5000 utilizing a loading rate of 5.88 gpd/ft<sup>3</sup> (ATS-SCAT-16-AC-2500) for achieving the BOD<sub>5</sub>/ TSS standard of <30mg/mL. Charles Patterson seconded the motion. Committee members present voted in favor of the motion 8-1. Committee members requested that Quanics be placed on the TAC agenda for February so that the committee could take further action provided Quanics, Inc. does not withdraw their request for approval of the units loaded at a rate of 12.5 gpd per ft<sup>3</sup>.

**HydroAction Industries request for approval of the HydroAction Aeration Treatment Unit Models AP500, AP600, AP750, AP1000, and AP1500 for meeting the BOD<sub>5</sub>/ TSS standard of <30mg/L, the same models with the Salcor 3G Disinfection Unit for the fecal coliform standards of <10000, <1000 and <200, <20 colonies/ 100mL, and the same models with Salcor 3G Disinfection Unit, reaeration, pump lockout failsafe, and an inspection port for NPDES discharge to the waters of the state not including Lake Erie and NPDES discharge to the waters of the state including Lake Erie**

James Conley, AK/HA Manufacturing

Mr. Conley presented committee members with an updated data set from Novatek. Committee members discussed HydroAction's request and the compressors offered. Mr. Conley clarified that HydroAction is requesting approval for use of a  $\frac{3}{4}$  horsepower compressor for the NPDES discharge systems and  $\frac{1}{4}$  horsepower compressor for all other systems. Mr. Conley clarified that the submitted fecal coliform performance data was from a unit utilizing a  $\frac{3}{4}$  horsepower compressor and that the provided Standard 40 testing was from a unit utilizing a  $\frac{1}{4}$  horsepower compressor. Scott Hetrick asked if HydroAction was requesting approval for use with a pretreatment tank. Mr. Conley stated that the Novatek testing did not include a pretreatment tank, but that the effluent is filtered to remove large solids before being introduced into the treatment train. Discussion ensued concerning the use of filtered effluent for testing products and requirements for pretreatment tanks before aeration treatment units.

Dick Bachelder made a motion to recommend approval of the HydroAction Aeration Treatment Unit Models AP500, AP600, AP750, AP1000, and AP1500 with  $\frac{1}{4}$  horsepower compressor and without a pretreatment tank for meeting the BOD<sub>5</sub>/ TSS standard of <30mg/L. Mark Tumeo seconded the motion. Committee members present voted in favor of the motion 8-1.

The committee discussed the fecal coliform performance information and HydroAction Industries request. Concern was expressed about the request to approve the unit in a configuration that is different than that tested. Mr. Conley modified HydroAction Industries request for approval for achieving the fecal coliform standards of <10000, <1000 <200, and <20 colonies/ 100mL to include the tested models, 0-5-5 SNG-UV, 0-6-5 SNG-UV, 0-7-5 SNG-UV, 0-10-5 SNG-UV, 0-15-5 SNG-UV, instead of those previously listed.

*Models 0-5-5 SNG-UV, 0-6-5 SNG-UV, 0-7-5 SNG-UV, 0-10-5 SNG-UV, and 0-15-5 SNG-UV include the AP model aeration treatment unit with  $\frac{3}{4}$  horsepower compressor, Salcor 3G Ultraviolet Disinfection Unit, reaeration within a separate pump chamber, discharge pump, and an inspection port.*

The committee discussed the presence of a valve in the pump discharge line of the reaeration chamber. Mr. Conley stated that the valve would be removed.

Committee members expressed concern that the supplied performance information did not support the request for meeting the fecal coliform standard of <20 colonies/ 100mL. Mark Tumeo made a motion to recommend denial of the HydroAction request for approval of models 0-5-5 SNG-UV, 0-6-5 SNG-UV, 0-7-5 SNG-UV, 0-10-5 SNG-UV, 0-15-5 SNG-UV for meeting the fecal coliform standard of <20 colonies/ 100mL. Dick Bachelder seconded the motion. Committee members present voted in favor of the motion.

Mark Tumeo made a motion to recommend approval of the HydroAction aeration treatment unit models 0-5-5 SNG-UV, 0-6-5 SNG-UV, 0-7-5 SNG-UV, 0-10-5 SNG-UV, 0-15-5 SNG-UV without a pretreatment tank for meeting the fecal coliform standards of <10,000, <1,000, and <200 colonies/100mL. Ernie Stickler seconded the motion. Committee members present voted in favor of the motion 8-1.

The committee questioned Mr. Conley about deficient data points in the Novatek testing results during the month of December. Mr. Conley stated that a diffuser had fallen off the end of the aeration tube and that HydroAction employees had difficulty getting to the testing facility to correct the problem. Discussion ensued concerning HydroAction's control panel and pump lockout failsafe. Mr. Conley explained that although the control panel utilized on the unit at Novatek did not shut off the discharge pump during the alarm event, HydroAction carries and will include a control panel that will shutoff the discharge pump during an alarm event involving any component of the treatment train.

Mark Stump made a motion to recommend approval of the HydroAction aeration treatment unit models 0-5-5 SNG-UV, 0-6-5 SNG-UV, 0-7-5 SNG-UV, 0-10-5 SNG-UV, 0-15-5 SNG-UV without a pretreatment tank, with the pumplockout control panel, and removing the valve for meeting the effluent standards specified in the current HSTS NPDES General Permit for discharge to the waters of the state other than Lake Erie and discharge to the waters of the state including Lake Erie. The motion was seconded by Mark Tumeo. Committee members present voted in favor of the motion 8-1.

#### **Non Gravel Trench Special Device Approval Subcommittee Update**

Carl Thompson, Infiltrator Systems  
Dick Bachelder, ADS  
Mark Tumeo, Cleveland State University

Carl Thompson provided a presentation explaining industries request for a soil absorption area reduction in Ohio and reductions currently given in other states. Mr. Thompson explained that industry is requesting use of a gravel equivalency factor of 1.5 to calculate the reduced soil absorption area. The concept involves multiplying the soil loading rate for septic tank effluent by the gravel equivalency factor to calculate the new soil loading rate when using fines free, non gravel, proprietary products in leaching trenches. Mr. Thompson explained that other states use a similar concept to calculate soil absorption component area reductions for these products. Discussion ensued concerning other states policies and results of current practices. During the discussion Mr. Thompson explained that some states offer higher reductions when the manufacturer of the product provides a warranty for the systems operation. Mr. Thompson explained that industries request did not include a warranty. A short discussion ensued concerning warranties of systems using these products to obtain a reduction in the soil absorption components area.

Dr. Tumeo stated that the website linking references and resources for the proposed special device approval will be up soon.

Dick Bachelder stated that the subcommittee will schedule a conference call to discuss unresolved issues once the website is up.

#### **Low Pressure Distribution Sand Filter Special Device Approval Subcommittee Update**

Ray Saporito, Ashtabula County Health Department  
Mark Fehring, Fehring Services  
Nathan Johnson, ODH

Mark Fehring and Ray Saporito presented pictures and a video demonstrating the proposed pressurized distribution network for a siphon dosed sand filter. Discussion ensued concerning the distribution network. Several committee members suggested changes to the distribution network including orifice orientation. Mark Fehring agreed to make the changes to the distribution network and rerun the demonstration.

#### **Pending Applications:**

Rebecca Fugitt informed the TAC that Enviro-Flo, Inc. has submitted an application for ORC 3718.04 Review and are working to complete the application.

#### **Modification to TAC standards and Criteria**

Rebecca Fugitt announced that program staff have been reviewing and modifying the BOD<sub>5</sub>/TSS and 3701 Review Checklists. Mark Tumeo announced that he has been working on guidance concerning the quantity and quality of performance data requested upon submission for review.

**Approval Process for a Tertiary Treatment Filter**

Berry Meadows, Superior Septic, LLC

Mr. Meadows explained the concept of a tertiary treatment filter he had developed and hoped to use in Trumbull County. Committee members explained that the regulations in Trumbull County were a result of discussions between that county and the Ohio EPA, and that the committee could not approve the filter for the use Mr. Meadows was seeking.

Discussion ensued concerning how a manufacturer of a specific component could seek recommendation for approval from the committee. Committee members decided to create a workgroup to work through the issue.

**Sewage Program Updates:**

Rebecca Fugitt announced that the Household and Small Flow on Site Sewage Treatment System Study Commission had released their recommendations to the General Assembly. Staff will be adding the document to the ODH website for all to review. Rebecca Fugitt announced that program staff is developing a sampling protocol for sampling of treatment components including sampling required by the NPDES permit. The protocol will be reviewed by TAC and interested parties.

The next TAC meeting is February 10, 2009 and will be held at ODNR, Building H-2 conference room.

The meeting was adjourned.

Approved on 2-10-09 as signified by:

  
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Rebecca Fugitt, TAC Chairperson

  
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Mark Stump, Secretary

## **Sewage Treatment Systems Technical Advisory Committee**

### **MEETING MINUTES**

Date: Tuesday – February 10, 2009

Time: 10:00 AM to 2:00PM

Location: Ohio Department of Natural Resources, 2045 Morse Road, Columbus

#### **TAC Members in Attendance (10 of 10) were present):**

ODH Director of Health Representative & TAC Chair – Rebecca Fugitt

Installer/ Service Provider – Mark Fehring, Fehring Services

Public – Ernest Stickler, Environmental Engineering Service

OEPA DSW Engineer – Mark Stump

Manufacturer Representative - Scott Hetrick, Norweco Inc.

OEHA Registered Sanitarian – Ralph Benson, Clermont County General Health District

AOHC Health Commissioner – Charles Patterson, Clark County Combined Health District

Manufacturer Representative — Dick Bachelder, PSA, Inc.

Academic - Dr. Mark Tumeo PhD, Cleveland State University

AOHC Health Commissioner –Raymond Saporito, Ashtabula County Health Department

#### **Not Present:**

ODNR Soil Scientist - Vacant

#### **Guests:**

Chris Mandich of Jet Inc., Jim Kugle of Uniontown Septic, Dick Harned of WDR, Inc., James Conley and Steve Davis of Hydro-Action, Cary Feller of Consolidated Treatment Systems, and Don Bach of Norweco, Inc.

Other ODH participants: Nathan Johnson

#### **Welcome and Agenda review:**

Introductions were made by all in attendance. Rebecca Fugitt reviewed the meeting agenda and announced that Norweco, Incorporated's request to modify the existing approval for meeting the effluent standards in the NPDES general permit was removed from the agenda because more technical, operational, installation, and maintenance information was requested by ODH program staff. Mrs. Fugitt announced that Don Bach with Norweco, Inc. was in attendance to provide a brief explanation of the proposed modification and answer questions. The request will be added to a future agenda

#### **Meeting Minutes:**

Rebecca Fugitt announced that Ralph Benson had emailed several suggested changes to the minutes and the revised minutes were provided to committee members. The TAC members reviewed the revised January 13, 2009 meeting minutes. A motion was made by Charles Patterson and seconded by Mark Tumeo for approval of the revised January 13, 2009 meeting minutes. TAC members present voted in favor of the motion.

#### **Update on Journal Entries**

Rebecca Fugitt reviewed the Director's Journal Entries resulting from recommendations from the January 13, 2009 TAC meeting. Journal Entries were drafted following the committees recommendations regarding Quanics, Inc.'s and Ecological Tanks' requests. The Directors Journal Entry for Ecological tanks included approval for a nutrient reduction based on performance information supporting the company's claims to meet the criteria of NSF Standard

245. Discussion regarding the approval for a nutrient reduction ensued. Mrs. Fugitt announced that Ecological Tanks had not provided the information requested by the committee at the December 9, 2008 meeting and that approval or disapproval of the system was necessary by February 25, 2009, in accordance with the requirements of the Ohio Revised Code 3718.04. Mark Tumeo made a motion to recommend denial of the remainder of the Aqua-Aire and Aqua-Safe components, as submitted per the application to ODH and TAC, failing from withdrawal of the application for said models or providing the information required by the motion of the December 9, 2008 meeting. The motion was seconded by Charles Patterson. Committee members voted in favor of the motion 8-0 with Ray Saporito abstaining from the vote because he was not present during much of the discussion.

**Consolidated Treatment Systems request for modification of the Enviro-Guard ENV and ENV-M models' previous approval for achieving fecal coliform standards of <1,000 colonies /100mL without the Salcor 3g UV disinfection unit**

Rebecca Fugitt explained that performance information provided by Consolidated Treatment Systems to support their request had been distributed to committee members by email. Mrs. Fugitt explained that the performance information was also included in CTS's request for approval of the companies Multi-Flo units which was previously reviewed by the committee. Mrs. Fugitt explained that CTS was requesting approval of the Enviro-Guard units for the same standard because they feel the units will perform as well, or better, since they are essentially Multi-Flo units with a pretreatment tank. Discussion ensued. Scott Hetrick made a motion to recommend approval of the modification to the Enviro-Guard ENV and ENV models for meeting the fecal coliform standard of 1000 colonies/100mL without the Salcor 3G UV disinfection unit. Ernie Stickler seconded the motion. TAC members voted in favor of the motion 9-0.

**Norweco, Incorporated**

Don Bach, Norweco, Inc.

Don Bach explained that Norweco, Inc. plans to request approval for a modification to the Norweco TNT treatment train, previously approved for meeting the standards outlined in the NPDES general permit, to include an option for chlorination and dechlorination in place of the Salcor UV disinfection unit. Mr. Bach distributed information outlining the request and limited performance, installation, maintenance, and technical information. Committee members explained that the request was not complete and made recommendations to Mr. Bach concerning what would be needed for review of the request. Committee members and Mr. Bach discussed the chlorine standards in the general permit and testing procedures in detail.

**Non Gravel Trench Special Device Approval Subcommittee Update**

Dick Bachelder, ADS

Mark Tumeo, Cleveland State University

Dick Bachelder explained that the subcommittee had scheduled a conference call for February 13, 2009 but that the conference call was canceled because of concern from some subcommittee members that were not available to participate and that others had not had time to review the provided resources in detail. Dick Bachelder explained that industry wants to move the process forward in full transparency to interested parties and wants to give everyone ample time to review the provided resources. Mr. Bachelder requested that all interested parties reconsider the name *Fines Free Distribution Media*, because the involved technologies provide advantages that other technologies that may be defined as fines free may not. Rebecca Fugitt reminded committee members that the website providing links to the resources suggested by the subcommittee members was available. Mr. Bachelder suggested that committee members and interested parties review the resources. Rebecca Fugitt announced that she would provide the link and password to anyone who was interested. A conference call will be scheduled at a later date.

**Low Pressure Distribution Sand Filter Special Device Approval Subcommittee Update**

Ray Saporito, Ashtabula County Health Department  
Mark Fehring, Fehring Services  
Nathan Johnson, ODH

Mark Fehring stated that he had not constructed and tested the pressure distribution system with the committee's recommendations concerning orifice orientation, but that he hoped to by the end of the week.

**NPDES Sampling Protocol**

Rebecca Fugitt announced that ODH program staff had drafted a sampling protocol to distribute to individuals conducting effluent sampling in compliance with the monitoring requirements in the NPDES general permit. Discussion ensued concerning the contents of the protocol and committee members suggested several changes. Committee members agreed to email Nathan Johnson with their suggestions.

**Modification to TAC standards and criteria and application form**

Committee members reviewed modifications to the application form and checklist for ORC 3718.04 and BOD/TSS Review. Several recommendations were made by committee members. Mark Tumeo suggested that the TAC Standards and Criteria be reviewed and modified before taking action on the application form and checklist. Committee members agreed. The TAC Standards and Criteria will be reviewed at the March meeting.

**Pending Applications:**

Rebecca Fugitt informed the TAC that Enviro-Flo, Inc. has submitted an application for ORC 3718.04 Review and are working with program staff to complete the application.

**Sewage Program Updates:**

Rebecca Fugitt announced that staff continue to update the program website and are in the process of adding a Home Owners' Page. Staff have been creating an agenda, finding presenters, and creating presentations for ODH's Midwest Workshop in March. Staff have also been reviewing a request from Clearstream Wastewater Systems, Inc. for approval of their aeration treatment unit for meeting the BOD<sub>5</sub> and TSS standard of <30gm/L. Rebecca Fugitt stated that Neil Martin is still waiting for his appointment to the committee.

The next TAC meeting is March 10, 2009 and will be held at ODNR, Building H-2 conference room.

The meeting was adjourned.

Approved on 3-10-09 as signified by:



Rebecca Fugitt, TAC Chairperson



Mark Stump, Secretary

## **Sewage Treatment Systems Technical Advisory Committee**

### **MEETING MINUTES**

Date: Tuesday – March 10, 2009

Time: 10:00 AM to 2:00PM

Location: Ohio Department of Natural Resources, 2045 Morse Road, Columbus

#### **TAC Members in Attendance (9 of 10 filled positions were present):**

ODH Director of Health Representative & TAC Chair – Rebecca Fugitt

Installer/ Service Provider – Mark Fehring, Fehring Services

Public – Ernest Stickler, Environmental Engineering Service

OEPA DSW Engineer – Mark Stump

Manufacturer Representative - Scott Hetrick, Norweco Inc.

OEHA Registered Sanitarian – Ralph Benson, Clermont County General Health District

AOHC Health Commissioner – Charles Patterson, Clark County Combined Health District

Manufacturer Representative – Dick Bachelder, PSA, Inc.

AOHC Health Commissioner –Raymond Saporito, Ashtabula County Health Department

#### **Not Present:**

Academic - Dr. Mark Tumeo PhD, Cleveland State University (excused)

ODNR Soil Scientist - Vacant

#### **Guests:**

Trent Lydic of Jet Inc., Don Bach of Norweco, Inc., Rene Dye and James Dye, Coin Bishop and Charles Ray of Bord Na Mona, Neil Martin of ODNR

Other ODH participants: Nathan Johnson

#### **Welcome and Agenda review:**

Introductions were made by all in attendance. Rebecca Fugitt announced that Mark Tumeo would not be able to attend the meeting. Mrs. Fugitt reviewed the meeting agenda and announced that she would like to add the committee's Annual Report to the end of the agenda. The report is due March 31, 2009. TAC members agreed to the addition.

#### **Meeting Minutes:**

The TAC members reviewed the February 10, 2009 meeting minutes. A motion was made by Charles Patterson and seconded by Mark Fehring for approval of the February 10, 2009 meeting minutes. TAC members present voted in favor of the motion.

#### **Ecological Tanks request to modify May 11, 2007 and October 29, 2007 approvals for the Aqua-Safe advanced treatment unit**

Calvin Locker

Calvin Locker explained that Ecological Tanks is requesting to modify the previously approved Aqua-Safe advanced treatment system to include precast concrete models (AS500-C, AS600-C, AS750-C, and AS1000-C) in addition to the fiberglass models included in the previous approvals for meeting the BOD<sub>5</sub>/TSS standard of <30 mg/L, the fecal coliform standard of <10,000 colonies/100mL, and NPDES discharge to the waters of the state other than Lake Erie. The concrete models are NSF approved, but were omitted from the 2007 approvals because Ecological Tanks did not originally intend to offer them for sale in Ohio. Mr. Locker had provided documentation supporting claims that the tanks are watertight and structurally sound and the documentation had

been circulated to committee members prior to the meeting. A short discussion ensued. Ray Saporito made a motion to recommend approval of the modification as requested. Scott Hetrick seconded the motion. TAC members voted in favor of the motion 8-0.

**Bord Na Mona request to modify the existing approval of the Puraflo system to receive a two foot soil depth credit without the use of the Salcor 3G UV disinfection unit**

Colin Bishop

Mr. Bishop provided a short video presentation to explain the Puraflo technology then explained that Bord Na Mona is requesting to modify the existing approval of the Puraflo systems to receive a two foot soil depth credit for meeting the fecal coliform standard of <1,000 colonies/ 100 mL without the use of the Salcor 3G UV disinfection unit. Mr. Bishop reviewed *Performance of Peat Filters in the Treatment of Domestic Wastewater in Minnesota* (Geerts, 2001) and recent data collected from the system reviewed in the report. Mr. Bishop also reviewed the Ohio Environmental Agencies current uses of the technology. Both the report and the OEPA design guidance had been forwarded to committee members prior to the meeting. Committee members expressed concern with the quantity of data provided and inquired whether additional fecal coliform data was available for the Puraflo system without disinfection. Mr. Bishop stated that additional data was available and reviewed a few sources. Committee members requested that Bord Na Mona compile additional fecal coliform data with an explanation of the testing methods and regimen, influent characteristics, and a summary table of the data. Bord Na Mona will present the data at a later date. No action was taken by the committee.

**Norweco, Incorporated request to modify the Norweco TNT NPDES treatment train to include the option of chlorine disinfection (with dechlorination) in place of the Salcor 3G Disinfection Unit**

Don Bach, Norweco, Inc.

Mr. Bach presented committee members with a submittal which included information to support Norweco, Inc.'s request for approval of a modification to the Norweco TNT treatment train. The Norweco TNT treatment train was previously approved for meeting the standards outlined in the NPDES general permit. The request was to modify the approval to include an option for chlorination and dechlorination in place of the Salcor UV disinfection unit. The submittal included the testing data provided to committee members in the submittal distributed on February 10, 2009 with two additional data points. Mr. Bach explained that after the February 10, 2009 meeting, an additional Norweco LF1000 unit with Bio-Max dechlorination tablets was placed behind the previously tested treatment train to address the chlorine residue concerns expressed at the February 10, 2009 TAC meeting. Nine dissolved oxygen and eleven chlorine data points were collected with the new configuration. The committee reviewed comments provided by Dr. Tumeo concerning the submitted data. Mark Stump expressed concern that some of the collected data did not support Norweco Inc.'s claims of meeting the effluent standards of the general permits. Discussion ensued concerning rather the committee should evaluate the whole treatment train or just the components involved in the modification. Further discussion ensued concerning ODH's review procedure prior to law and rule changes in July of 2007 and whether the committee should consider reviewing the department's approvals. Committee members agreed that only standards affected by the modification would be reviewed for this modification request. Rebecca Fugitt expressed concern that the submittal included only sixteen fecal coliform data points. Committee members agreed that additional testing results for chlorine residue, dissolved oxygen, and fecal coliform from the current product configuration would be needed before the modification could be approved. Dick Bachelder made a motion to deny Norweco Inc.'s request to modify the Norweco TNT treatment train's approval for meeting the standards in the NPDES general permits for discharge to the waters of the state not including Lake Erie to include the option of chlorination and dechlorination in place of the Salcor 3G UV disinfection unit. Ralph Benson seconded the motion. Committee members present voted in favor of the motion 7-0 with Scott Hetrick abstaining.

### **Non Gravel Trench Special Device Approval Subcommittee Update**

Dick Bachelder, ADS

Dick Bachelder explained that the subcommittee had participated in a conference call on March 6, 2009. Mr. Bachelder explained that the majority of subcommittee agreed that the draft special device approval to be presented to TAC will include a twenty five percent reduction in the required soil absorption area for leaching trenches utilizing plastic chambers or expanded polystyrene bundles. The special device approval will not allow for an additional twenty five percent reduction to be taken in addition to the effluent quality soil absorption area reduction provided when a pretreatment device, approved for achieving a BOD<sub>5</sub>/TSS standard of <30 mg/L, is used. Both the draft special device approval and the Alternative Leaching Trenches Special Device Approval (Approved in August of 2007) will be modified to include a requirement for all designs to include additional area for resting (twenty five percent of the design soil absorption area), a maximum trench width of two feet, and stronger specifications and definitions for distribution methods. Mr. Bachelder explained that the subcommittee will hold one more conference call to clarify a few issues concerning the documents name, definitions used within the document, and the approval process for manufacturers seeking coverage under the document. Mr. Bachelder announced that a draft document will be presented to the full committee in April. Rebecca Fugitt stated that the Ohio Department of Health is committed to ensuring that all local health departments and their staff have the opportunity to comment on the draft special device approval once it is available. Mrs. Fugitt stated that ODH will distribute the draft via email and asked Mr. Saporito (OAH), Mr. Patterson (OAH), and Mr. Benson (OEHA) to accept local health department comments and provide them to the committee for consideration. Mr. Benson stated that he would also provide the draft to the Ohio Environmental Health Association's Sewage Technical Committee for comments. Mr. Benson provided comments concerning standards of practice for all leaching systems. Discussion ensued and Mr. Bachelder suggested that such language be developed as an appendix to both special device approvals. Further discussion ensued concerning the manufacturers development of Ohio specific and ODH approved design and installation manuals with installation checklists.

### **Low Pressure Distribution Sand Filter Special Device Approval Subcommittee Update**

Ray Saporito, Ashtabula County Health Department

Mark Fehring, Fehring Services

Nathan Johnson, ODH

Mark Fehring provided an explanation and pictures taken during the tests of the pressure distribution system with the committee's recommendations concerning orifice orientation. Mr. Fehring and Mr. Saporito explained that a draft special device approval of the technology will be presented to the committee in April.

### **Modification to the TAC Standards and Criteria and application form**

Due to time restraints Rebecca Fugitt recommended that the committee move on to the agenda item *NPDES Sampling Protocol*. Mr. Patterson recommended that Mrs. Fugitt schedule a conference call for review of the committee's standards and criteria. Committee members agreed; a conference call will be scheduled to review the agenda item.

### **NPDES Sampling Protocol**

A revised version of the draft sampling protocol to distribute to individuals conducting effluent sampling in compliance with the monitoring requirements in the NPDES general permit was reviewed by all in attendance. Discussion ensued concerning the contents of the protocol and committee members suggested several changes. Mrs. Fugitt expressed staff's appreciation for the committee's comments.

**Pending Applications:**

Rebecca Fugitt informed the TAC that Enviro-Flo, Inc. continues to work with program staff to complete their application for BOD<sub>5</sub>/TSS and ORC 3718.04 Review.

**Sewage Program Updates:**

Rebecca Fugitt announced that staff continue to update the program website and are preparing for ODH's Midwest Workshop in March. Staff continue to review a request from Clearstream Wastewater Systems, Inc. for approval of their aeration treatment unit for meeting the BOD<sub>5</sub> and TSS standard of <30gm/L. Rebecca Fugitt stated that Neil Martin is still waiting for his appointment to the committee.

The next TAC meeting is April 14, 2009 and will be held at ODNR, Building H-2 conference room.

The meeting was adjourned.

Approved on 4-14-09 as signified by:



Rebecca Fugitt, TAC Chairperson



Mark Stump, Secretary

## **Sewage Treatment Systems Technical Advisory Committee**

### **MEETING MINUTES**

Date: Tuesday – April 14, 2009

Time: 10:00 AM to 2:00PM

Location: Ohio Department of Natural Resources, 2045 Morse Road, Columbus

#### **TAC Members in Attendance (11 of 11 were present):**

ODH Director of Health Representative & TAC Chair – Rebecca Fugitt

Installer/ Service Provider – Mark Fehring, Fehring Services

Public – Ernest Stickler, Environmental Engineering Service

OEPA DSW Engineer – Mark Stump

Manufacturer Representative - Scott Hetrick, Norweco Inc.

OEHA Registered Sanitarian – Ralph Benson, Clermont County General Health District

AOHC Health Commissioner – Charles Patterson, Clark County Combined Health District

Manufacturer Representative – Dick Bachelder, PSA, Inc.

AOHC Health Commissioner – Raymond Saporito, Ashtabula County Health Department

Academic - Dr. Mark Tumeo PhD, Cleveland State University

ODNR Soil Scientist -- Neil Martin

#### **Guests:**

Chris Mandich and Ed Schloss of Jet Inc., Chuck DeWitt of Aero-Tech, Zak Sherman and Carl Thompson of Infiltrator Systems, Ross Pattison of Ring Industrial Bob Fletcher of Norweco, Inc., Colin Bishop and Charles Ray of Bord Na Mona, Laura Kramer Kuns and Dan Lark of Lake county General Health District

Other ODH participants: Nathan Johnson

#### **Welcome and Agenda review:**

Introductions were made by all in attendance. Rebecca Fugitt reviewed the meeting agenda. No changes were suggested.

#### **Meeting Minutes:**

The TAC members reviewed the March 10, 2009 meeting minutes. A motion was made by Dick Bachelder and seconded by Ray Saporito for approval of the March 10, 2009 meeting minutes. TAC members present voted in favor of the motion 10-0.

#### **Bord Na Mona request to modify the existing approval of the Puraflo system to receive a two foot soil depth credit without the use of the Salcor 3G UV disinfection unit**

Colin Bishop, Bord Na Mona

Additional performance information provided by Bord Na Mona had been distributed to committee members prior to the meeting as was requested during the March 10, 2009 meeting. Mr. Bishop provided a short explanation of the request and reviewed the new performance information. A short discussion ensued concerning the number of data points provided.

Dick Bachelder made a motion to recommend approval of Bord Na Mona's request to modify the existing approval of the Puraflo Peat Filter to receive a two foot soil depth credit for meeting the fecal coliform standard of <1,000 colonies/ 100 mL without the use of the Salcor 3G UV disinfection unit. The motion was seconded by Ernie Stickler. Committee members voted in favor of the motion 10-0.

**Norweco, Incorporated request to modify the Norweco TNT NPDES treatment train to include the option of chlorine disinfection (with dechlorination) in place of the Salcor 3G Disinfection Unit**

Bob Fletcher, Norweco, Inc.

Mr. Fletcher presented a submittal supporting Norweco, Inc.'s request to modify to the Norweco TNT's existing approval for meeting the standards outlined in the OEPA General Permit (discharge to the waters of the state other than Lake Erie) and for a two foot soil depth credit for meeting the fecal coliform standard of 1,000 colonies/ 100mL. The proposed modification is to utilize chlorine disinfection and dechlorination in place of the Salcor 3G disinfection unit.

Discussion ensued concerning the length of time a full chlorination or dechlorination component would last after being filled with tablets and the ChemCheck chemical detection system and whether it is connected to each chlorination and dechlorination component. Bob Fletcher stated that the chlorination and dechlorination tablets would need to be filled once every six months in most situations and that the ChemCheck chemical detection system would cause an alarm event or act as a failsafe when additional tablets are needed. Mark Fehring stated that his experience supported Mr. Fletcher's statement that the component would only need to be filled every six months in most situations. Mr. Fletcher agreed that the ChemCheck chemical detection system would be connected to each chlorination and dechlorination component and would cause an alarm event or activate the pump lockout or telemetry failsafe when any chlorination or dechlorination device needed refilled.

Further discussion ensued concerning the wicking and sticking of chlorine tablets in feeder tubes, and whether the approval would need to ensure that the units are serviced through the summer months when human exposure to improperly treated effluent is most likely. Mark Fehring stated that the reliability of the chlorination components is the same as UV disinfection components. Both components can fail and allow improperly treated effluent to be discharged without causing an alarm event (chlorination when the tablets wick and stick in the feeder tubes and UV disinfection when the UV bulb becomes dirty). Several committee members including Mr. Fehring stated that the maintenance required for the chlorination components should be the same as is needed for UV disinfection and that additional restrictions were necessary for this technology.

Committee members discussed the number of data points included in the submittal. Dr. Tumeo asked that the minutes reflect that he had reviewed the data with Norweco many times, and although this is a known technology, the amount of data submitted is moderate to small. He stated that although the amount of data is small, it was favorably distributed and provided a high level of confidence in the components performance. The collection and submittal of additional data would not significantly increase the confidence interval of the data set.

Neil Martin made a motion to recommend modification of the Norweco TNT's existing approval for meeting the standards outlined in the OEPA General Permit for discharge to the waters of the state other than Lake Erie and for a two foot soil depth credit for meeting the fecal coliform standard of 1,000 colonies/ 100mL to include the option to utilize chlorine disinfection and dechlorination in place of the Salcor 3G disinfection unit with the following restrictions:

1. The treatment train shall include one chlorination and two dechlorination components as tested.
2. The ChemCheck chemical detection system shall be installed and connected to each chlorination and dechlorination component and shall activate the pump lockout or telemetry and an alarm event for NPDES systems and an alarm event for systems utilizing the technology for a soil depth credit.
3. The homeowner of either system shall be required to secure and renew service contracts for the life of the system. Service contracts shall require the service provider to provide service to the system at least every six months.

The motion was seconded by Charles Patterson. Committee members voted in favor of the motion 9-0 with Scott Hetrick abstaining from the vote.

### **Non Gravel Trench Special Device Approval Subcommittee Update**

Dick Bachelder, PSA, Inc.

Dr. Mark Tumeo, PhD, Cleveland State University

Dick Bachelder provided a short presentation explaining the timeline and process of creating this special device approval and naming those involved in the process. Committee members suggested several minor grammatical changes to the document for the purpose of clarification. Ralph Benson suggested changing the minimum opening for inspection ports. Committee members agreed to change the minimum opening for inspection ports from four inches to two inches. Comments provided by the Lake County General Health District were distributed to all in attendance. The Lake County General Health District comments are summarized below:

- EPS bundles have not remained level in trenches after backfill in some installations.
- The Tyler Table does not allow for the installation of leaching trenches within eight inches of a vertical flow restricting layer.
- Section IV Specifications, Di is confusing. The SDA should limit the soil types that can be moved and placed in the leaching trench area for the purposes of creating sidewall to sand. Other types of soils will lose their structure when moved.
- Increasing the area loading rates will increase the potential for premature formation of a biomat and surfacing of effluent.
- Consideration should be given to requiring pressure distribution for trenches exceeding 150 feet in length.
- Most of the studies in the referenced literature review were conducted in sandy soils, yet the reduction is not restricted to these soils.
- EPS bundles were not studied in most of the referenced literature.

Committee members discussed Lake Counties comments and agreed to modify the document to limit the soil types that could be applied to the surface of the ground for the purposes of creating trench sidewall to sand, loamy sand, and sandy loam. Committee members also agreed that the document should be modified to suggest that long trenches (exceeding 100 feet in length) should utilize pressure distribution.

Dr. Tumeo made a motion to recommend approval of the special device approval with the changes discussed during the meeting. Charles Patterson seconded the motion. Committee members voted in favor of the motion 9-0 with Dick Bachelder abstaining.

### **Alternative Leaching Trench Special Device Approval**

Dick Bachelder made a motion to recommend approval for a modification in the language of the Alternative Trench Special Device Approval as approved in August of 2007 to include requirements identical to those in the Leaching Trench Products Utilizing Non-gravel, Fines-Free Distribution System as summarized below:

- Add language requiring the installation of additional area for the purpose of resting portions of the soil absorption system (25% of the calculated area or one trench, whichever is greater)
- Add language to reflect the revised requirements concerning fill applied to the surface of the ground for the purpose of creating trench sidewall (sand, loamy sand, or sandy loam).
- Add language to reflect the two foot maximum trench width requirement.
- Add language reflecting changes in the O&M section.
- Add definitions and an explanation of the distribution requirements.

The motion was seconded by Neil Martin. Committee members voted in favor of the motion 10-0.

**May Meeting**

Committee members discussed canceling the meeting scheduled for May. Due to a lack of items to be discussed in May members agreed to cancel the meeting scheduled for May 12, 2009 and will meet again June 9, 2009.

**Low Pressure Distribution Sand Filter Special Device Approval Subcommittee Update**

Ray Saporito, Ashtabula County Health Department  
Mark Fehring, Fehring Services  
Nathan Johnson, ODH

The subcommittee continues to work on drafting a special device approval for review.

**Modification to the TAC Standards and Criteria and application form**

Committee members agreed to schedule a conference call on May 13, 2009 to discuss changes to the Standards and Criteria.

**TAC Annual Report**

Rebecca Fugitt distributed a draft of the annual report and solicited suggestions. Committee members reviewed the draft and made several recommendations. Committee members thanked Rebecca for her work on the report.

**Pending Applications:**

Rebecca Fugitt informed the TAC that program staff have recently been in contact with Aero-Tech and Glendon Biofilters concerning applications to TAC.

**Sewage Program Updates:**

Rebecca Fugitt informed the committee that SB 100 had been introduced to the senate and would make several changes to the ORC 3718. Mrs. Fugitt stated that companion bills, competing with SB 100, are expected to be introduced in the next few days. The companion bills are expected to follow the recommendations of the HSTS and SFOSTS Study Commission. Rebecca Fugitt informed the committee that the OEPA has agreed to commit 5 million dollars from the America Recovery and Reinvestment Act for failing household sewage treatment systems. The grant money will be distributed to eligible homeowners across the state. The details of the grant program continue to be resolved.

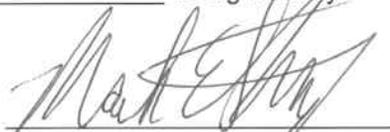
Mrs. Fugitt announced that program staff continue to participate in regional, monthly meetings with local health departments to provide updates and information concerning the program. Mrs. Fugitt requested suggestions for meeting topics. Committee members suggested reviewing the ARRA grant program and the chamber and bundled EPS special device approval.

The next TAC meeting is June 9, 2009 and will be held at ODNR, Building H-2 conference room. The meeting was adjourned.

Approved on 7-14 2009 as signified by:



Rebecca Fugitt, TAC Chairperson



Mark Stump, Secretary

## **Sewage Treatment Systems Technical Advisory Committee**

### **MEETING MINUTES**

Date: Tuesday – July 14, 2009

Time: 10:00 AM to 2:00PM

Location: Ohio Department of Natural Resources, 2045 Morse Road, Columbus

#### **TAC Members in Attendance (10 of 11 were present):**

ODH Director of Health Representative & TAC Chair – Rebecca Fugitt

OEPA DSW Engineer – Mark Stump

Public – Ernest Stickler, Environmental Engineering Service

Academic - Dr. Mark Tumeo PhD, Cleveland State University

Installer/ Service Provider – Mark Fehring, Fehring Services

Manufacturer Representative - Scott Hetrick, Norweco Inc.

OEHA Registered Sanitarian – Ralph Benson, Clermont County General Health District

AOHC Health Commissioner – Charles Patterson, Clark County Combined Health District

AOHC Health Commissioner –Raymond Saporito, Ashtabula County Health Department

ODNR Soil Scientist -- Neil Martin

#### **Not Present:**

Manufacturer Representative — Dick Bachelder, PSA, Inc. Excused

#### **Guests:**

Trent Lydic Jet Inc., Chuck DeWitt of Aero-Tech, Bob Fletcher and Don Bach of Norweco, Inc., Charles Ray of Bord Na Mona, James Conley and Steve Davis of Hydro-Action, Bob Reckers, William Wehrmann, and Mike Ulmann of Winelco, Inc., Inc., and Stephen Tricamo of the Potter's Company

Other ODH participants: Nathan Johnson

#### **Welcome and Agenda review:**

Introductions were made by all in attendance. Rebecca Fugitt reviewed the meeting agenda. No changes were suggested.

#### **Meeting Minutes:**

The TAC members reviewed the April 14, 2009 meeting minutes. A correction concerning the meeting date in the footnote was identified. A motion was made by Charles Patterson and seconded by Ernie Stickler for approval of the April 14, 2009 meeting minutes as modified. TAC members present voted in favor of the motion 9-0.

#### **Norweco, Incorporated request to modify the Norweco TNT NPDES treatment train with chemical disinfection to remove the pump chamber and change the location of the reaeration device to within the BioKinetic filter**

Bob Fletcher, Norweco, Inc.

Mr. Fletcher presented a submittal supporting Norweco, Inc.'s request to modify to the Norweco TNT's existing approval for meeting the standards outlined in the OEPA General Permit for discharge to the waters of the state except Lake Erie. The proposed modification is to move the location of the reaeration device from a separate pump tank to within the BioKinetic filter located within the aeration treatment unit. The pump chamber would be removed from the treatment train. Mr. Fletcher explained that the proposed modification includes the same air pump and diffuser identified in the existing approvals. Mr. Fletcher explained that due to the volume of the

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Manufacturer Representative – Dick Bachelder, PSA, Inc. Excused

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Other ODH participants: Nathan Johnson

#### **Welcome and Agenda review:**

Introductions were made by all in attendance. Rebecca Fugitt reviewed the meeting agenda. No changes were suggested.

#### **Meeting Minutes:**

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BioKinetic filter and the use of flow equalization, the design provides the treated effluent with twenty minutes of contact time with the fine air diffusion.

A short discussion ensued concerning the provided performance data. A motion to recommend approval of the modification to the existing Norweco TNT NPDES treatment train with chemical disinfection to move the location of the reaeration device from a separate pump chamber to within the BioKinetic filter as specified in the application, was made by Mark Tumeo. The motion was seconded by Ralph Benson. Committee members voted in favor of the motion 8-0 with Scott Hetrick abstaining from the vote.

**Winelco, Inc., Inc. request approval of the Uvirex 36 Ultraviolet Disinfector**

William Wehrmann, Bob Reckers and Mike Ulmann

Mike Ulmann provided an explanation of Winelco, Inc. and their requested approval. Winelco, Inc. has developed an UV disinfection unit and is requesting approval to use the component as a replacement for the UV disinfection unit in previously approved treatment trains.

Discussion ensued concerning the quality and quantity of performance data. The supplied data did not include temperature measurements and limited influent and effluent data. Ray Saporito pointed out that all provided data was from samples collected and analyzed by the company.

William Wehrmann and Mark Fehring stated that there is a need for alternative disinfection devices because of reliability issues of the components included in approved treatment trains.

Committee members discussed recommending approval to substitute a limited number of components in new and replacement systems. Committee members stated that a limited approval would allow Winelco, Inc. to collect more data and correct failing systems.

Dr. Tumeo made a motion to recommend approval of the use of Winelco, Inc.'s Uvirex 36 Ultraviolet Disinfector installed, and maintained in accordance with the conditions specified in Winelco, Inc.'s application, as a pretreatment component special device that may be substituted for the Salcor 3G or The Disinfector ultraviolet disinfection units in other approved sewage treatment systems for use in Ohio with the following limitations and restrictions:

- Winelco, Inc. shall ONLY install units as a substitution for approved Salcor 3G or The Disinfector ultraviolet disinfection or chlorination/dechlorination components in existing or new discharging systems approved by the Ohio Department of Health and authorized under Ohio General NPDES Permit No. OHK000001 and OHL000001, or systems approved for a soil depth credit by the Ohio Department of Health based on fecal coliform reduction.
- Winelco, Inc. shall not substitute any units in new systems being installed without the express written consent of the pretreatment component manufacturer.
- Winelco, Inc. shall not install or authorize the installation of more than 25 units
- Winelco, Inc. shall not install or authorize the installation of units after January 1, 2010
- Winelco, Inc. shall collect influent and effluent samples from every installation and provide analysis of the total suspended solids, temperature, flow, and fecal coliform of each sample.
- Winelco, Inc. shall provide TAC with documentation of Chain of Custody for all samples.
- Winelco, Inc. shall contract with a third party qualified laboratory to collect and analyze at least 10% of the samples.
- Winelco, Inc. shall report to TAC at the January meeting with adequate data to support the requested approval.

The motion was seconded by Charles Patterson. Committee members voted in favor of the motion 9-0.

**Alternative Leaching Trench Special Device Approval**

Rebecca Fugitt updated committee members concerning modifications to the Alternative Leaching Trench Special Device Approval. The modifications have been made to the Special Device Approval and the document is being reviewed at ODH.

**Low Pressure Distribution Sand Filter Special Device Approval**

Ray Saporito, Ashtabula County Health Department  
Mark Fehring, Fehring Services  
Nathan Johnson, ODH

The Low Pressure Distribution Sand Filter Special Device Approval was reviewed by committee members. Nathan Johnson stated that the workgroup created to draft the special device approval intends to include several drawings of the design in the document or within an appendix. Committee members identified several grammatical errors.

Steve Tricamo, Mark Fehring, and Mark Tumeo discussed the ability to scale the sand filter design to meet flows from four and possibly five bedroom homes. Although the special device approval as submitted to the committee describes and authorizes only the previously constructed and tested design, it was acknowledged that modifications to the document to include scaled designs may be requested at a future date.

A motion to recommend approval of the Low Pressure Distribution Sand Filter Special Device Approval as submitted to TAC and modified was made by Ray Saporito. The motion was seconded by Mark Fehring. Committee members voted in favor of the motion 8-0. Ralph Benson was not present to vote on the motion. Mark Tumeo requested that the minutes reflect that the recommended approval is for a specific design and is based on data collected by the TAC subcommittee during field testing of the design.

Committee member Mark Stump was dismissed from the meeting at 12:30PM. Mark Stump's absence was excused.

**Modification to the TAC Standards and Criteria and application form**

Committee members reviewed the draft of the Standards and Criteria. Modifications to the Standards and Criteria were noted. A motion to recommend approval of the TAC Standards and Criteria was made by Ernie Stickler. The motion was seconded by Mark Fehring. Committee members voted in favor of the motion 8-0.

**Pending Applications:**

Rebecca Fugitt informed TAC that program staff have been in contact with Aero-Tech and Sludgehammer, Inc. concerning applications to TAC.

**Sewage Program Updates:**

Rebecca Fugitt informed the committee that HB 236 had been introduced in the Ohio House of Representatives. HB 236 is a companion bill to SB 100.

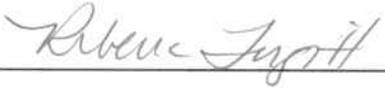
Rebecca Fugitt informed the committee that ODH continues to work with OEPA concerning the dispersal of 5 million dollars from the America Recovery and Reinvestment Act for failing household sewage treatment systems. Sixty one loan applicants requested funds exceeding ten million dollars. ODH will continue to work with OEPA and local health departments to provide guidance and assistance with the program.

Mrs. Fugitt announced that although travel reimbursement for staff has been limited by the department, program staff plan to review the ARRA loan program and the chamber and bundled EPS special device approval at future regional, monthly meetings with local health departments.

The next TAC meeting is August 11, 2009 and will be held at ODNR, Building H-2 conference room.

The meeting was adjourned.

Approved on 8-11-09 as signified by:



Rebecca Fugitt, TAC Chairperson



Mark Stump, Secretary

## **Sewage Treatment Systems Technical Advisory Committee** **MEETING MINUTES**

Date: Tuesday – August 11, 2009

Time: 10:00 AM to 2:00PM

Location: Ohio Department of Natural Resources, 2045 Morse Road, Columbus

### **TAC Members in Attendance (10 of 11 were present):**

ODH Director of Health Representative & TAC Chair – Rebecca Fugitt

OEPA DSW Engineer – Mark Stump

Public – Ernest Stickler, Environmental Engineering Service

Academic - Dr. Mark Tumeo PhD, Cleveland State University

Installer/ Service Provider – Mark Fehring, Fehring Services

Manufacturer Representative - Scott Hetrick, Norweco Inc.

OEHA Registered Sanitarian – Ralph Benson, Clermont County General Health District

AOHC Health Commissioner – Charles Patterson, Clark County Combined Health District

ODNR Soil Scientist -- Neil Martin

Manufacturer Representative — Dick Bachelder, PSA, Inc.

### **Not Present:**

AOHC Health Commissioner –Raymond Saporito, Ashtabula County Health Department;

Excused

### **Guests:**

Ed Schloss and Chris Mandich with Jet Inc., Bob Fletcher with Norweco, Inc., Charles Ray of Bord Na Mona, Dick Harned with WDR, Inc., Jim Cruver with Salcor, Inc., Dan Wickham and Bob Davis with SludgeHammer, and Tom Teal with Glendon Biofilter

Other ODH participants: Nathan Johnson

### **Welcome and Agenda review:**

Introductions were made by all in attendance. Rebecca Fugitt reviewed the meeting agenda. No changes were suggested.

### **Meeting Minutes:**

The TAC members reviewed the July 14, 2009 meeting minutes. A motion was made by Charles Patterson and seconded by Scott Hetrick for approval of the July 14, 2009 meeting minutes as submitted. TAC members present voted in favor of the motion 9-0.

### **Norweco, Incorporated: Request to exchange the currently approved Salcor 3G UV disinfection unit with the Norweco Model AT 1500 UV disinfection unit**

Bob Fletcher, Norweco, Inc.

Bob Fletcher provided a submittal supporting Norweco, Inc.'s request to exchange the currently approved Salcor 3G UV disinfection unit with the Norweco Model AT 1500 UV disinfection unit. Mr. Fletcher modified Norweco's request to include the substitution on all ODH approved treatment trains utilizing the Salcor 3G UV disinfection unit, not just the Norweco 960 and TNT treatment trains. When presenting the performance data Mr. Fletcher explained that the testing facility had installed three UV disinfection units at their site. The facility installed the Salcor UV lamp in one unit, and each of the two proposed Norweco UV lamps in the other units. The testing facility utilized a protocol derived from NSF Standard 55 while collecting performance data to support Norweco's claim that the Norweco Model AT 1500 provided equal treatment to the Salcor 3G UV disinfection unit. Committee members discussed the NSF testing results, the two UV lamps utilized in the Norweco unit, and the Salcor UV lamp at depth.

Jim Cruver addressed concerns about the business arrangement between Salcor, Inc. and Norweco, Inc. Committee members explained that TAC review of Norweco's request would not encompass market and business issues concerning the product. TAC review would encompass only the product, Norweco's performance claims, and performance data supporting those claims.

The committee explained that performance data was insufficient to support Norweco's performance claims. Committee members discussed the July recommendation concerning a similar request from Winelco, Inc. Dr. Tumeo explained that he felt it would be consistent and appropriate to recommend a similar limited approval to Norweco. The limited approval would allow the installation of a limited number of units so that real world data could be collected and analyzed. Dr. Tumeo made a motion to recommend approval of the use of Norweco, Inc.'s Model AT 1500 Ultraviolet Disinfectant Unit installed, and maintained in accordance with the conditions specified in Norweco, Inc.'s application, as a pretreatment component special device that may be substituted for the Salcor 3G or The Disinfector ultraviolet disinfection units in other approved sewage treatment systems for use in Ohio with the following limitations and restrictions:

- Norweco, Inc. shall ONLY install units as a substitution for approved Salcor 3G or The Disinfector ultraviolet disinfection or chlorination/dechlorination components in existing or new discharging systems approved by the Ohio Department of Health and authorized under Ohio General NPDES Permit No. OHK000001 and OHL000001, or systems approved for a soil depth credit by the Ohio Department of Health based on fecal coliform reduction.
- Norweco, Inc. shall not substitute any units in new systems being installed without the express written consent of the pretreatment component manufacturer
- Norweco, Inc. shall not install or authorize the installation of more than 50 units
- Norweco, Inc. shall not install or authorize the installation of units after February 1, 2010
- Norweco, Inc. shall collect influent and effluent samples from every installation and provide analysis of the total suspended solids, temperature, flow, and fecal coliform of each sample.
- Norweco, Inc. shall provide TAC with documentation of Chain of Custody for all samples
- Norweco, Inc. shall contract with a third party qualified laboratory to collect and analyze at least 10% of the samples
- Norweco, Inc. shall report to TAC at the February meeting with adequate data to support the requested approval

The motion was seconded by Neil Martin. Committee members voted in favor of the motion 8-0 with Scott Hetrick abstaining from the vote.

Mr. Fletcher asked if Norweco could contract with the NSF facility to collect performance data from the system installed at the site. Committee members agreed that data from the NSF facility was acceptable to support Norweco's claims.

**Sludgehammer Ltd. request for approval of the SludgeHammer Aerobic Bacterial Generator Model S 400 for meeting the BOD<sub>5</sub> and TSS standard of less than 30mg/L for a soil absorption area sizing reduction**

Daniel Wickham, SludgeHammer

Mr. Wickham provided a short presentation explaining the product and the company including an explanation of the bacterial additive utilized in the unit.

Mr. Wickham explained that the company had recently received a letter from NSF explaining the scaling of Model S 600. Mr. Wickham modified SlugeHammers request to include both Model S 400 and Model S 600.

A short discussion ensued concerning the product and the additive. Ernie Stickler made a motion to recommend approval of the Sludgehammer Ltd. Aerobic Bacterial Generator Models S 400 and S 600 for meeting the standard of less than 30mg/L BOD<sub>5</sub> and TSS. The motion was seconded by Dick Bachelder. Committee members voted in favor of the motion 9-0.

Mark Tumeo pointed out that the next item on the agenda, Glendon Biofilter, would require discussion of material that has been identified as proprietary information and would require the committee to go into executive session. Dr. Tumeo suggested moving Glendon Biofilter's request to the end of the agenda so those in attendance could observe discussion of the other items on the agenda before being dismissed. There were no objections to the modification to the agenda.

#### **Special Device Approval Updates**

Rebecca Fugitt informed committee members that a Journal Entry approving use of Leaching Trench Products Utilizing a Non-gravel, Fines-Free Distribution System Special Device Approval has been signed by the Director of Health. Mrs. Fugitt added that program staff expect a Journal Entry approving the Alternative Leaching Trench Special Device Approval as modified in the near future. The sand filter special device approval has not been forwarded to the director for signature at this time. Staff are waiting for detailed drawings to add to the document. A Low Pressure Pipe Special Device Approval has been drafted and is being reviewed by concerned members of industry and academia. Staff plan to present the special device approval at a future TAC meeting.

#### **Pending Applications:**

Rebecca Fugitt informed TAC that program staff have been in contact with Aero-Tech concerning an application to TAC but staff does not expect a complete application before the September TAC meeting. Committee members discussed canceling the September TAC meeting if staff does not receive a complete application from industry.

#### **Sewage Program Updates:**

Rebecca Fugitt informed the committee that the states budget bill, HB 1, extended the suspension of sections of Ohio Revised Code 3714 until January 1, 2010. Committee hearings concerning the four bills that would change the language in the same code will continue during the fall session.

Rebecca Fugitt informed the committee that ODH continues to work with OEPA concerning the dispersal funds from the America Recovery and Reinvestment Act for failing household sewage treatment systems. Loan agreements are being completed and should be dispersed to the applicants in the near future. ODH will continue to work with OEPA and local health departments to provide guidance and assistance with the program.

Mrs. Fugitt announced that although travel reimbursement for staff has been limited by the department, program staff will participate in regional meetings with local health departments. Staff will review the Leaching Trench Products Utilizing a Non-gravel, Fines-Free Distribution System and Alternative Leaching Trench Special Device Approvals at the August meetings.

The next TAC meeting is September 8, 2009 and will be held at ODNR, Building H-2 conference room.

Mark Tumeo made a motion to enter executive session. The motion was seconded by Scott Hetrick. Committee members voted in favor of the motion by role call vote, 9-0. Guests in attendance were excused from the meeting.

**Glendon Biofilter Technologies, Inc. request for approval of the Glendon Biofilter Models M31 and M32 for meeting the BOD<sub>5</sub> and TSS standard of 30 mg/L and fecal coliform standards of less than 10,000, 1,000, 200 , and 20 colonies/ 100 mL.**

Tom Teal Glendon Biofilter, Inc.

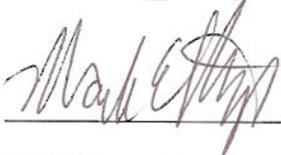
Mr. Teal provided an explanation of the Glendon Biofilter Models M31 and M32 and discussed the performance data included in the companies submittal. A brief discussion concerning the submitted data and the performance of approximately 44 of the systems in Clermont County, which were installed under experimental concurrence, ensued. Committee members expressed concern with the performance data. Dr. Tumeo requested that Mr. Teal provide an analysis of the data using a 90% confidence interval. The provided analysis utilized a 95% confidence interval and did not support the company's claims of consistently meeting the fecal coliform standard of 20mg/L. Committee members also expressed concern over built in place systems, stacking of units, water-tightness of tanks, the water settled sand wedge utilized on sloping sites, lineal loading requirements, language in each of the company's five manuals not consistent with Ohio regulations and approvals and a procedure for the handling of the companies proprietary information. Committee members also requested that Glendon Biofilter Technologies, Inc. consider revising their warranty to extend to all components of the system for the same time period. Committee members suggested that Mr. Teal work with ODH program staff and revise the company's manuals and submittal to address these concerns. Glendon Biofilter Technologies, Inc. will be added to the TAC meeting agenda on October 13, 2009.

The meeting was adjourned.

Approved on 11-10-09 as signified by:

  
\_\_\_\_\_

Rebecca Fugitt, TAC Chairperson

  
\_\_\_\_\_

Mark Stump, Secretary

## **Sewage Treatment Systems Technical Advisory Committee**

### **MEETING MINUTES**

Date: Tuesday – November 10, 2009

Time: 10:00 AM to 2:00PM

Location: Ohio Department of Natural Resources, 2045 Morse Road, Columbus

#### **TAC Members in Attendance (10 of 10 were present):**

ODH Director of Health Representative & TAC Chair – Rebecca Fugitt

OEPA DSW Engineer – Mark Stump

Public – Ernest Stickler, Environmental Engineering Service

Academic - Dr. Mark Tumeo PhD, Cleveland State University

Installer/ Service Provider – Mark Fehring, Fehring Services

Manufacturer Representative - Scott Hetrick, Norweco Inc.

OEHA Registered Sanitarian – Ralph Benson, Clermont County General Health District

AOHC Health Commissioner – Charles Patterson, Clark County Combined Health District

Manufacturer Representative — Dick Bachelder, PSA, Inc.

AOHC Health Commissioner –Raymond Saporito, Ashtabula County Health Department

ODNR Soil Scientist -- Vacant

#### **Guests:**

Trent Lydic with Jet Inc., Jon Naseman with Norweco, Inc., Charles Ray of Bord Na Mona, Dan Lark with the Lake County Health Department, Zak Sherman With Infiltrator Systems, Anthony Janicek with Cleveland State University, Chris Stewart with ADS, Inc., Matt Deaton with ODNR, Mike Felton and Joe Keiser with StreamKey,

#### **Guests by conference call:**

Tom Teal with Glendon Biofilter, Jason Menchhofer with the Van Wert County Health Department

Other ODH participants: Nathan Johnson and Amy Mills

#### **Welcome and Agenda review:**

Introductions were made by all in attendance. Rebecca Fugitt reviewed the meeting agenda. No changes were suggested. Rebecca Fugitt introduced Matt Deaton, ODNR, to the committee. Mr. Deaton will be sitting in on committee meetings until a replacement for Neil Martin, the ODNR Soil Scientist, is appointed to the committee.

#### **Meeting Minutes:**

TAC members reviewed the August 11, 2009 meeting minutes. Tom Teal suggested a change in the meeting minutes to state that TAC recommended that Glendon Biofilter consider revising their warranty to extend the warranty to all components of the system for the same time period. A motion was made by Mark Tumeo and seconded by Charles Patterson for approval of the August 11, 2009 meeting minutes as amended. TAC members present voted in favor of the motion.

#### **Jet, Incorporated: Request to change the location of the diffuser assembly from a separate basin to within the pretreatment component on the previously approved NPDES treatment train.**

Trent Lydic, Jet, Inc.

Jet Lydic provided committee members with information supporting Jet, Inc.'s request to change the location of the diffuser assembly to within the pretreatment component eliminating the need for the installation of a separate reaeration basin. Discussion ensued concerning the use of a four inch sampling cross and the sampling procedure for proper collection of effluent samples from the cross. Mark Fehring stated that some local health departments would not allow the use

of a four inch sampling cross and that in his experience a sampling port should be at least six inches in diameter to allow for proper effluent sample collection. Mr. Lydic stated that Jet, Inc.'s NPDES manual did include a procedure for effluent sampling from a four inch sampling cross, but the company will revise the request to include a sampling port with a six inch or greater diameter.

Dick Bachelder made a motion to recommend approval of the modification to the previously approved NPDES treatment train as requested by Jet, Inc. and shown in the submitted schematic, J500WR, with the change to a sampling port with a six inch or greater diameter.

The motion was seconded by Mark Fehring. Committee members voted in favor of the motion.

**A proposed project to develop a risk-based approach for examining vertical separation distances in on-site wastewater disposal systems**

Dr. Mark Tumeo and Anthony Janicek, Cleveland State University

Anthony Janicek provided a short presentation explaining a risk-based model for determination of vertical separation distances in on-site wastewater disposal systems. Mr. Janicek explained that the request is for recommendation from the committee for approval of the use of funds from the Sewage Treatment Systems Innovation Fund

Dr. Tumeo and Mr. Janicek answered questions from the committee concerning the applicability of the model for determination of vertical separation distances by the state and local health departments. Further discussion ensued concerning the use of the model to determine nutrient concentrations in wastewater at differing vertical separation distances.

Dr. Tumeo left the room.

A motion was made by Ralph Benson to recommend that the department fund the proposal submitted by Dr. Tumeo and Anthony Janicek titled *A proposed project to develop a risk-based approach for examining vertical separation distances in on-site wastewater disposal systems* and as outlined in the draft budget request presented at the November 10, 2009 TAC meeting from the Sewage Treatment Systems Innovation Fund.

The motion was seconded by Mark Stump. Committee members voted in favor of the motion with Dr. Tumeo abstaining from the vote.

Dr. Tumeo returned.

**Glendon Biofilter Technologies, Inc. request for approval of the Glendon Biofilter Models M31 and M32 for meeting the BOD<sub>5</sub> and TSS standard of 30 mg/L and fecal coliform standards of less than 10,000, 1,000, 200 , and 20 colonies/ 100 mL,**

Tom Teal Glendon Biofilter, Inc. via conference call

Mr. Teal provided a short explanation of the Glendon Biofilter Models M31 and M32 and the technical and performance information forwarded to committee members prior to the meeting.

Jason Menchhofer, Van Wert County Health Department provided the committee with an explanation of his experiences with the EnviroSeptic system. Van Wert County has installed EnviroSeptic systems under an experimental concurrence over the last two years. The EnviroSeptic system utilizes gradient drains to address hydraulic overloading of shallow soils. The use of gradient drains to address hydraulic overloading of shallow soils in place of linear loading is included in Glendon Biofilter Technologies' application.

Committee members expressed concerns with the submittal. Concerns included sizing of pump tankss, number of inspections provided with purchase of the system, basin spacing, basin design, the system's warranty, the use of gradient drains, the use of linear loading, system cover.

Committee members also pointed out that the performance data was missing several data points that were included in the October 15, 2009 performance information, that the submittal lacked a schematic of the system and that the submittal did not address the function of approximately 44 of the systems in Clermont County under experimental concurrence.

Dan Lark with the Lake County Health Department addressed the committee with concerns over the use of gradient drains to address hydraulic overloading of shallow soils in place of linear loading. Mr. Lark cautioned committee members concerning implications on future submittals if TAC recommends approval of a system that does not utilize linear loading.

Committee members requested that the department provide a list of items that need addressed in Glendon Biofilter's submission. After review by the committee, the list will be forwarded to Mr. Teal for revision of Glendon's application. Further discussion ensued concerning the deadline for ODH action on the application. Rebecca Fugitt explained that Mr. Teal had submitted a request to extend the deadline for ODH action to December 31, 2009 or later as agreed upon by both Glendon and ODH.

**Low Pressure Pipe Special Device Approval**

A draft of the Low Pressure Pipe Special Device Approval was provided to committee members for comment and review. Committee members suggested that the department provide a written explanation of the goals of the special device approval and include the special device approval on the next committee meeting.

**Pending Applications:**

Rebecca Fugitt informed TAC that the department has been in contact with Clearstream, EnviroSeptic, and Consolidated Treatment Systems concerning applications to TAC.

**Sewage Program Updates:**

Rebecca Fugitt informed the committee that legislature is discussing and has circulated possible amendments to Senate Bill 110.

Rebecca Fugitt informed the committee that ODH continues to work with OEPA and local health departments concerning the dispersal funds from the America Recovery and Reinvestment Act for failing household sewage treatment systems.

The next TAC meeting is December 8, 2009 and will be held at ODNR, Building I.

The meeting was adjourned.

Approved on 12-8-09 as signified by:



Rebecca Fugitt, TAC Chairperson



Mark Stump, Secretary

## **Sewage Treatment Systems Technical Advisory Committee**

### **MEETING MINUTES**

Date: Tuesday – December 8, 2009

Time: 10:00 AM to 2:00PM

Location: Ohio Department of Natural Resources, 2045 Morse Road, Columbus

#### **TAC Members in Attendance (9 of 10 were present):**

ODH Director of Health Representative & TAC Chair – Rebecca Fugitt

OEPA DSW Engineer – Mark Stump

Public – Ernest Stickler, Environmental Engineering Service

Academic - Dr. Mark Tumeo PhD, Cleveland State University

Installer/ Service Provider – Mark Fehring, Fehring Services

Manufacturer Representative - Scott Hetrick, Norweco Inc.

OEHA Registered Sanitarian – Ralph Benson, Clermont County General Health District

AOHC Health Commissioner – Charles Patterson, Clark County Combined Health District

AOHC Health Commissioner –Raymond Saporito, Ashtabula County Health Department

By conference call:

Manufacturer Representative – Dick Bachelder, PSA, Inc.

ODNR Soil Scientist -- Vacant

#### **Guests:**

Bob Fletcher with Norweco, Inc., Matt Deaton with ODNR, Joe Keiser with StreamKey, Bennette Burks of 3–Engineering, Jeff Coomer with Consolidated Treatment Systems, Inc., and Tim Gerber

Other ODH participant: Nathan Johnson

#### **Welcome and Agenda review:**

Introductions were made by all in attendance. Rebecca Fugitt reviewed the meeting agenda. Bennette Burk requested to add a request from Consolidated Treatment Systems, Inc. to the agenda. The request was for recommendation for approval for the option to utilize telemetry in place of pump lockout on the previously approved Enviro-Guard and Multi-Flo NPDES treatment trains. There were no objections to the request.

#### **Meeting Minutes:**

TAC members reviewed the November 10, 2009 meeting minutes. A motion was made by Mark Tumeo and seconded by Ernie Stickler for approval of the November 10, 2009 meeting minutes as submitted. TAC members present voted in favor of the motion.

#### **Consolidated Treatment Systems, Inc.'s request for recommendation for approval of the Nayadic Pretreatment Component Models M-6A, M-8A, M-1050A, and M-2000A with the Salcor 3G Ultraviolet Disinfection Unit for achieving the fecal coliform standard of <10,000 and <1,000 colonies/ 100mL**

Bennette Burks of 3–Engineering

Consolidated Treatment Systems, Inc. had previously submitted an Application for ORC 3718 Review prior to the May 13, 2008 TAC meeting. TAC members were provided additional performance information supplied by Consolidated Treatment Systems, Inc. to address concerns expressed by committee members during that meeting.

Bennette Burks provided a short presentation to outline the supplemental performance information. Discussion ensued concerning the statistical analysis of the performance information.

Scott Hetrick made a motion to recommend approval of the Nayadic Pretreatment Component Models M-6A, M-8A, M-1050A, and M-2000A with the Salcor 3G Ultraviolet Disinfection Unit for achieving the fecal coliform standard of <10,000 and <1,000 colonies/ 100mL as requested by Consolidated Treatment Systems, Inc. The motion was seconded by Mark Tumeo. Committee members voted in favor of the motion.

**Consolidated Treatment Systems, Inc.'s request to modify the previously approved Consolidated Treatment Systems, Inc.'s Enviro-Guard ENV-.075 and Enviro-Guard ENV-.75 NPDES treatment train with the Salcor 3G Ultraviolet Disinfection Unit, reaeration, and pump lockout and the Multi-Flo Models FTB - 0.5, 0.6, 0.75, 1.0 and 1.5 NPDES treatment train with the Salcor 3G Ultraviolet Disinfection Unit, reaeration, and pump lockout to include the option to utilize telemetry in place of pump lockout**

Bennette Burks of 3-Engineering

Bennette Burks provided committee members with technical information concerning the company's telemetry technology. Mr. Burks explained that the company's previous approvals only allowed the use of pump lockout in the NPDES approved treatment trains and that the company would like to provide homeowners the option to use telemetry with these systems. Mr. Burks explained how the telemetry works and that the currently approved systems can utilize telemetry with a minor modification.

Charles Patterson made a motion to recommend approval of the modification to the Enviro-Guard ENV-.075 and Enviro-Guard ENV-.75 NPDES treatment train with the Salcor 3G Ultraviolet Disinfection Unit, reaeration, and pump lockout and the Multi-Flo Models FTB - 0.5, 0.6, 0.75, 1.0 and 1.5 NPDES treatment train with the Salcor 3G Ultraviolet Disinfection Unit, reaeration, and pump lockout to include the option to utilize telemetry in place of pump lockout as requested by Consolidated Treatment Systems, Inc. The motion was seconded by Mark Fehring. Committee members voted in favor of the motion.

**Discussion about the approval of pretreatment components for soil depth credits**

Ralph Benson requested that the committee consider the approval of pretreatment components for soil depth credits. Mr. Benson made the statement that these systems can be used to decrease the separation distance in sensitive areas. Mr. Benson also pointed out that these systems are tested in a controlled environment and may not operate as tested in the field. Furthermore, Mr. Benson pointed out that these systems are not tested after installation. Mark Stump pointed out that many of these systems are also approved for NPDES discharge and will be sampled. Mr. Stump said that once sufficient data points are acquired the committee will be able to review the field performance of many of these systems. Mr. Benson asked for the AOHC representatives' opinions. Mr. Saporito and Mr. Patterson said that, although it may be different in other districts, their boards of health would consider the risk in sensitive areas when allowing the installation and design of sewage treatment systems. Dr. Tumeo stated that monitoring the ground water in these areas is the proper way to determine risk to the aquifer from the installation of these systems. Dr. Tumeo stated that monitoring the ground water would be expensive.

**Norweco Inc.'s request to modify all previously approved Norweco Singulair 960 and TNT series treatment trains with the Salcor 3G Ultraviolet Disinfection Unit to replace the Salcor 3G Ultraviolet Disinfection Unit with Norweco, Inc.'s AT 1500 Ultraviolet Disinfection System**

Bob Fletcher, Norweco, Inc.

Norweco Inc. had previously requested recommendation for approval of the modification at the August 11, 2009 TAC meeting. At that time the committee had recommended a conditional

approval of the modification. One condition of the approval was that Norweco, Inc. must submit additional performance information.

Bob Fletcher circulated additional performance information to support the company's request for approval of the modification.

A discussion ensued as to whether the committee would recommend approval of the AT 1500 UV Disinfection System as a disinfection option to be used with other manufacturers previously approved treatment trains. TAC decided that recommendation for approval of the disinfection unit in other manufacturers treatment trains would not be considered unless requested by the manufacturers. Mr. Fletcher asked if installers would have the option to use the AT 1500 UV Disinfection System in place of Salcor 3G UV Disinfection Unit in other manufacturers' approved treatment trains. Committee members informed Norweco, Inc. that the committee would recommend approval to substitute the AT 1500 UV Disinfection System in place of the Salcor 3G Disinfection Unit in only the previously approved Norweco Singulair 960 and TNT series treatment trains.

Mark Tumeo made a motion to recommend approval of the modification to all previously approved Norweco Singulair 960 and TNT series treatment trains with the Salcor 3G Ultraviolet Disinfection Unit to replace the Salcor 3G Ultraviolet Disinfection Unit with Norweco, Inc.'s AT 1500 Ultraviolet Disinfection System as requested by Norweco, Inc. The motion was seconded by Ray Saporito. Committee members voted in favor of the motion with Scott Hetrick abstaining.

**Norweco Inc.'s request to modify the approved Singulair TNT NPDES treatment train by utilizing a direct bury AT 1500 in conjunction with re-aeration within the Bio-Kinetic Filter inside the Singulair TNT tank**

Bob Fletcher, Norweco, Inc.

Bob Fletcher supplied information explaining and supporting the company's request. A short discussion ensued concerning the drawing of the treatment train. Committee members requested that the diameter of the inspection port be designated as six inches minimum. Committee members also requested that the company add installation instructions for the direct bury UV disinfection unit to the company's installation checklist, specifically backfill instructions. A discrepancy in the company's warranty length was noted in the submitted information. Bob Fletcher ensured committee members that the company would warranty the treatment train for two years. Committee members requested that the discrepancy be corrected in the company's literature.

Ralph Benson made a motion to recommend approval of the modification to all previously approved Norweco Inc.'s request to modify the approved Singulair TNT NPDES treatment train to utilize a direct bury AT 1500 in conjunction with re-aeration within the Bio-Kinetic Filter inside the Singulair TNT tank. The motion was seconded by Mark Tumeo. Committee members voted in favor of the motion with Scott Hetrick abstaining.

**Low Pressure Pipe Special Device Approval**

The department provided a written explanation of the goals of the special device approval and a draft of the Low Pressure Pipe Special Device Approval to committee members for comment and review. Several committee members expressed concern about the drafting of the special device approval by the department and the lack of input from industry or a TAC subcommittee. Discussion ensued as to whether there is a need for the special device approval and the complexity of the technology. Joe Keiser with StreamKey stated that the technology is complex and is more complex than the drip dispersal technology. Mr. Keiser suggested that the technology only be used under an assurance similar to drip dispersal. Ralph Benson pointed out differences between the technology and mounds making pressure distributed leach trenches the more complex technology. Several committee members expressed confusion as to the need for the technology in Ohio and Ralph Benson questioned why homeowners would use the technology.

Committee members made a list of questions to be addressed concerning the special device approval. The department will work with committee members to address the concerns and add the Low Pressure Pipe Special Device Approval to a future agenda.

**Discussion on establishing criteria for combined pretreatment/soil dispersal units**

Rebecca Fugitt stated that the department would like the committee to discuss the recent requests from manufacturers seeking approval for products that not only treat effluent but disperse the effluent to the soil. Mrs. Fugitt stated that two manufacturers, EnviroSeptic and Glendon Biofilter, had requested approval of their products at TAC and had difficulty in the approval process. Mrs. Fugitt stated that the department has been in contact with other manufacturers with similar products and expects applications for these products in the future. Mrs. Fugitt asked if there is a more efficient way for manufacturers to request recommendation for approval than the pretreatment component process.

Dr. Tumeo explained that he did not see these components as combined systems. He stated that the effluent from these products has been tested at a point within the system and at that point the pretreatment component ends and a soil absorption component begins. Dr. Tumeo stated that manufacturers must be prepared to justify the soil absorption component. He explained that the committee is not married to these products utilizing the Tyler Table to justify sizing, but the manufacturer must support their sizing methods utilizing formulas acceptable within the geological field.

**Pending Applications:**

Rebecca Fugitt informed TAC that the department has been in contact with Clearstream and EnviroSeptic concerning applications to TAC.

**Sewage Program Updates:**

Rebecca Fugitt informed the committee that the department has learned that the legislature is discussing extension of the suspension of sections of the Ohio Revised Code that address sewage treatment systems for another six months.

Rebecca Fugitt informed the committee that approximately 3.5 million dollars of funds from the America Recovery and Reinvestment Act is under contract for the repair or replacement of failing household sewage treatment systems.

The next TAC meeting is January 12, 2010 and will be held at ODNR, Building I.

The meeting was adjourned.

Approved on 1-12-2010 as signified by:

Rebecca Fugitt

Rebecca Fugitt, TAC Chairperson

Mark Stump

Mark Stump, Secretary